ADDENDUM TO THE 2005-2006 HAITI DEMOGRAPHIC AND HEALTH SURVEY

Addendum to Chapter 11, Nutritional Status

INFANT AND YOUNG CHILD FEEDING (IYCF) PRACTICES

Appropriate Infant and Young Child Feeding (IYCF) practices include breastfeeding through the age of two years, the introduction of solid and semi-solid foods at age 6 months, and a gradual increase in the amount of food given and the frequency of feeding as the child gets older. The average, healthy **breastfed child** should receive solid and semi-solid foods 2-3 times per day at age 6-8 months, and 3-4 times per day at age 9-23 months, with an additional snack 1-2 times per day. The minimum frequencies for feeding children in developing countries are based on the energy output of complementary foods. The energy needs of children are based on age-specific total daily energy requirements, plus 2 SD (to cover almost all children), minus the average energy intake from breast milk. Infants with low breast milk intake need to be fed more frequently than those with high breast milk intake. However, care should be taken that feeding frequencies do not exceed recommended input from complementary foods because excessive feeding can result in displacement of breast milk (PAHO/WHO, 2003).

Although the World Health Organization recommends that infants be breastfed up to the age of two years, some infants are not breastfed at all, or stopped breastfeeding before their second birthday. Guidelines have been developed for these children, who may not have been breastfed because their mother was HIV positive, or because their mother had died, or for other reasons (WHO, 2005). It is recommended that the **non-breastfed child** be given solid and semi-solid foods 4-5 times per day at age 6-23 months, with an additional snack 1-2 times per day.

Appropriate nutrition includes feeding children a variety of foods to ensure that nutrient requirements are met. Studies have shown that plant-based complementary foods by themselves are not sufficient to meet the needs of some children for certain micronutrients (WHO/UNICEF, 1998). Therefore, it is advised that children eat meat, poultry, fish, or eggs daily, or as often as possible. Vegetarian diets may not meet children's nutrient requirements unless supplements or fortified foods are also provided. Vitamin A-rich fruits and vegetables should be consumed daily, and the diets of children should include an adequate amount of fat. Fat is important in the diets of infants and young children because it provides essential fatty acids, facilitates absorption of fat-soluble vitamins (such as vitamin A), and enhances dietary energy density and palatability. Tea and coffee are not recommended for children because they contain compounds that inhibit iron absorption. Sugary drinks and excessive juice consumption should be avoided because other than energy they contribute little to the diet and decrease the child's appetite for more nutritious foods (PAHO/WHO, 2003).

In summary,

- Breastfed children age 6-23 months should receive animal-source foods and vitamin A-rich fruits and vegetables daily (PAHO/WHO, 2003). Because first foods almost always include a grain- or tuber-based staple, it is unlikely that young children who eat less than three food groups will receive both an animal-source food and a vitamin A-rich fruit or vegetable. Therefore, three food groups are considered the minimum number appropriate for breastfed children (Arimond and Ruel, 2004).

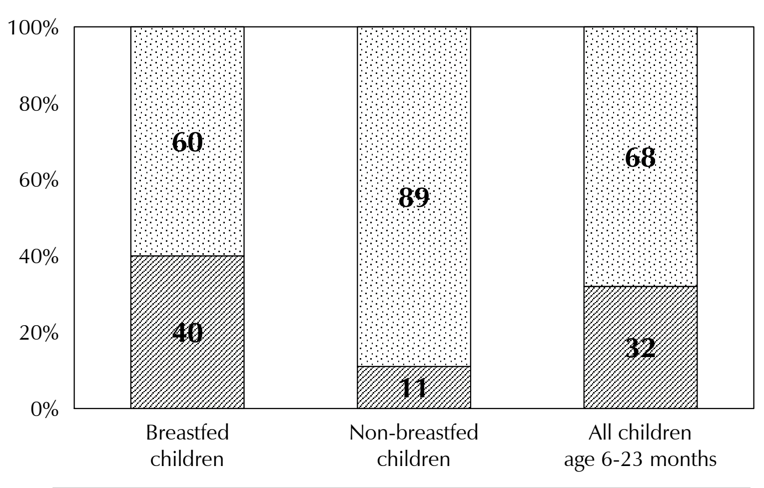
- Breastfed infants age 6-8 months should receive complementary foods 2-3 times per day, with 1-2 snacks; breastfed children age 9-23 months should be receive meals 3-4 times per day, with 1-2 snacks (PAHO/WHO, 2003). Table 1 shows the percentage of breastfed children who were fed at least the minimum number of times per day for their age (i.e., twice for infants age 6-8 months and three times for children age 9-23 months).

- Non-breastfed children age 6-23 months should receive milk or milk products to ensure that their calcium needs are met. In addition, they need animal-source foods and vitamin A-rich fruits and vegetables. Four food groups are considered the minimum number appropriate for non-breastfed young children.

- Non-breastfed children age 12-23 months should be fed meals 4-5 times per day, with 1-2 snacks (WHO, 2005). Table 1 shows the percentage of non-breastfed children age 6-23 who were fed at least the minimum number of times per day (i.e., four times).

According to the results presented in Table 1, 86 percent of youngest Haitian children age 6-23 months living with the mother received breast milk or breast milk substitutes during the 24-hour period before the survey, 75 percent had an adequately diverse diet, i.e., they had been fed foods from the appropriate number of food groups, depending on their age and breastfeeding status, and 38 percent had been fed the minimum number of times per day appropriate for their age. Feeding practices of only 32 percent of children age 6-23 months in Haiti meet the minimum standards with respect to all three of the IYCF feeding practices (Figure 1).

Figure 1 **Infant and Young Child Feeding (IYCF) Practices, Haiti 2005-2006**



Breastfed children are more likely than non-breastfed children to be fed the minimum number of times per day and to receive foods from the minimum number of food groups for their age. Children age 6-8 months (48 percent) are more likely to meet the minimum feeding standards than older children (22-32 percent). Comparing children in urban and rural areas, there is only a small difference in the proportion of children fed according to the IYCF feeding practices (33 and 32 percent, respectively); however, there are marked differences by region. According to the 2005-2006 Haiti DHS survey results, children residing in Artibinite region (40 percent) are almost twice as likely to be fed according to the recommended practices as children in Nord-Ouest and Sud-Est regions (22 percent each). However, these results should be interpreted with caution because of the small number of children for which reports are available in the different regions. As expected, children of mothers with primary education or higher (35-39 percent) and children in households in the highest wealth quintile (43 percent) are more likely to be fed according to the IYCF feeding practices than children of mothers with no education (25 percent) and children in households in the lowest wealth quintile (27 percent).

Arimond, M., and M.T. Ruel. 2004. Dietary Diversity is Associated with Child Nutritional Status: Evidence from 11 Demographic and Health Surveys. *Journal of Nutrition* 134: 2579.

Pan-American Health Organization and World Health Organization (PAHO/WHO). 2003. *Guiding Principles for Complementary Feeding of the Breastfed Child*. Washington, D.C. and Geneva, Switzerland: PAHO/WHO.

World Health Organization (WHO). 2005. *Guiding Principles for Feeding Nonbreastfed Children 6 to 24 Months of Age*. Geneva, Switzerland: WHO.

World Health Organization and United Nations Children's Fund (WHO/UNICEF). 1998. *Complementary Feeding of Young Children in Developing Countries: A Review of Current Scientific Knowledge*. Geneva: World Health Organization, WHO/NUT98.1

Table 1 Infant and young child feeding (IYCF) practices

Percentage of youngest children age 6-23 months living with the mother who are fed according to three IYCF feeding practices based on the number of food groups received and the number of times per day the child was fed in the past 24 hours (the day and night preceding the survey), by breastfeeding status and background characteristics, Haiti 2005

	Among breastfed children 6-23 months, percentage fed:				Among non-breastfed children 6-23 months, percentage fed:					Among all children 6-23 months, percentage fed:				
Background characteristic	3+ food groups[1]	Minimum times or more[2]	Both 3+ food groups and minimum times or more	Number of children	Milk or milk products[3]	4+ food groups	4+ times or more	With 3 IYCF practices[4]	Number of children	Breast milk, milk, or milk pro-ducts[3]	3+ or 4+ food groups[5]	Minimum times or more[6]	With all 3 IYCF practices	Number of children
Age of child (months)														
6-8	58.2	70.2	49.1	281	94.6	*	*	*	7	99.9	58.1	68.5	47.9	288
9-11	78.2	34.7	34.1	238	79.8	*	*	*	26	98.0	79.1	33.0	31.4	264
12-17	83.3	40.9	37.6	451	55.1	69.0	16.4	13.5	126	90.2	80.2	35.6	32.4	577
18-23	87.4	38.9	38.7	199	39.5	70.4	13.7	9.8	265	65.5	77.7	24.6	22.2	464
Sex														
Male	75.5	45.6	39.0	574	53.9	72.6	16.5	11.9	217	87.4	74.7	37.6	31.6	792
Female	78.3	47.1	40.6	594	40.8	68.9	12.5	9.2	206	84.7	75.9	38.1	32.5	801
Residence														
Urban	77.8	50.7	42.2	368	60.5	71.0	17.4	12.5	175	87.3	75.6	40.0	32.6	543
Rural	76.5	44.3	38.8	801	38.3	70.6	12.5	9.3	248	85.4	75.1	36.8	31.8	1,049
Region														
Aire Metropolitaine/ reste-quest	73.8	51.4	40.7	346	64.1	74.6	19.6	14.7	157	88.8	74.1	41.4	32.6	504
Sud-Est	73.9	37.7	28.2	77	25.9	(48.2)	(7.4)	(3.0)	22	83.3	68.1	30.9	22.5	99
Nord	80.5	42.7	38.4	116	42.3	(84.2)	(3.4)	(3.4)	38	85.9	81.4	33.1	29.9	154
Nord-Est	81.2	36.3	31.4	47	25.0	(59.0)	(6.7)	(3.8)	10	87.3	77.4	31.3	26.7	57
Artibinite	82.8	53.0	50.8	201	45.2	70.1	22.3	16.6	92	82.8	78.8	43.4	40.1	293
Centre	77.4	50.7	44.5	140	26.4	(60.3)	(6.7)	(4.4)	40	83.8	73.6	41.0	35.7	180
Sud	76.4	43.6	38.1	75	53.3	*	*	*	20	90.3	76.3	35.8	31.4	94
Grand-ause	72.5	31.8	29.5	57	26.9	*	*	*	10	89.1	73.1	28.4	25.9	67
Nord-Quest	73.3	32.5	28.3	76	31.5	68.5	5.4	2.1	25	83.3	72.1	25.9	21.9	101
Nippes	77.1	44.5	36.3	32	29.5	59.8	5.0	1.7	11	82.6	(72.8)	(34.7)	(27.8)	43
Mother's education														
No education	67.5	37.3	30.0	400	26.2	58.2	10.2	8.0	124	82.5	65.3	30.9	24.8	523
Primary	81.7	49.6	44.1	518	39.5	72.0	6.3	4.2	153	86.2	79.5	39.8	35.0	670
Secondary	83.8	51.4	46.0	236	69.7	79.4	25.0	18.7	128	89.4	82.2	42.1	36.4	364
More than secondary	*	*	*	16	100.0	*	*	*	19	*	*	*	38.6	35
Wealth quintile														
Lowest	68.7	40.7	32.8	305	19.8	57.3	6.1	2.8	79	83.5	66.4	33.5	26.6	384
Second	74.5	38.5	32.6	262	33.3	66.5	10.7	7.4	76	85.1	72.7	32.3	27.0	338
Middle	82.2	51.5	46.5	224	46.3	73.7	10.0	6.3	77	86.3	80.0	40.9	36.2	300
Fourth	84.2	47.5	42.6	230	55.9	81.4	14.7	10.7	109	85.7	83.3	36.9	32.3	339
Highest	78.9	62.1	52.7	149	77.0	71.0	30.2	24.8	83	91.8	76.1	50.7	42.8	232
Total	76.9	46.3	39.8	1,169	47.5	70.8	14.5	10.6	423	86.0	75.3	37.9	32.1	1,592

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and

[1] Food groups: a. infant formula, milk other than breast milk, cheese or yogurt, or other milk products; b. foods made from grains, roots, and tubers, including porridge, fortified baby food from grains; c. vitamin A-rich fruits and vegetables (and red palm oil); d. other fruits and vegetables; e. eggs; f. meat, poultry, fish, and shellfish (and organ meats); g. legumes and nuts; h. foods made with oil, fat, butter.

[2] At least twice a day for breastfed infants age 6-8 months and at least three times a day for breastfed children age 9-23 months

[3] Includes commercial infant formula, fresh, tinned and powdered animal milk, and cheese, yogurt and other milk products

[4] Non-breastfed children age 6-23 months are considered to be fed with three IYCF feeding practices if they receive other milk or milk products and are fed at least the minimum number of times per day and receive at least the minimum number of food groups for their age..

[5] 3+ food groups for breastfed children and 4+ food groups for non-breastfed children

[6] Fed solid or semi-solid food at least twice a day for infants 6-8 months, 3+ times for other breastfed children, and 4+ times for non-breastfed children